



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,756	11/27/2001	Heinz Epping	GK-EIS-1041 /500593.20033	2148

26418 7590 04/10/2003

REED SMITH, LLP  
ATTN: PATENT RECORDS DEPARTMENT  
599 LEXINGTON AVENUE, 29TH FLOOR  
NEW YORK, NY 10022-7650

EXAMINER

HARVEY, DIONNE

ART UNIT

PAPER NUMBER

2643

12

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/830,756**

Applicant(s)  
**Epping et al**

Examiner  
**Dionne Harvey**

Art Unit  
**2643**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 22-41 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

Art Unit: 2643

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the support portions of claim 27 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

Art Unit: 2643

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the support portion, of claim 26, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 27 recites "support portions", there is insufficient antecedent basis for this limitation.

Art Unit: 2643

***Claim Rejections - 35 U.S.C. § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 26 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 recites that the width of the sound inlet corresponds to the periphery of the microphone. Clarification is required.

Claim 29 recites the limitation "the sound duct" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 U.S.C. § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22-28,30,31,34,35,37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Uzawa (US 5,148,492).

Art Unit: 2643

Regarding claim 22, in figure 1, Uzawa teaches a microphone comprising a diaphragm(1) having a first surface, being in the direction of the ambient air, and second surface, being in the direction of the microphone housing; the first surface oriented toward the sound source (originating from ambient) and the second surface which is at least partially acoustically separated from the first surface, via casing 4; the second surface faces away from the sound source; at least one slot shaped sound inlet (8), which is defined by left casing wall(4) and the center cup-shaped casing wall (4); sound waves pass through said sound inlet to the second surface, forming an acoustic inductance so that the passed sound waves have a delay; and at least one damping element (see acoustic resistive agent 9 and supporting passage); said sound inlet having an acoustic resistance being less than the damping element.

Regarding claim 23, Uzawa teaches that the damping element is formed by a sound passage provided with acoustic damping material(9) and which connects a cavity. The center cup-shaped casing member(4) in combination with horizontally disposed acoustic resistive member(9) define a cavity which is in communication with sound inlet(8).

Regarding claim 24, Uzawa teaches that the sound outlets have a substantially rectangular cross section.

Regarding claim 25, Uzawa teaches that the height of the inlet is less than the length and that sound flow is along a longitudinal direction and, the length of the inlet is less than the width.

Art Unit: 2643

Regarding claim 26, as best understood and with regard to the U.S.C. 112 second paragraph rejection above, Uzawa appears to teaches that the width of the sound inlet corresponds to the periphery of the microphone.

Regarding claim 27, as best understood and with regard to the U.S.C. 112 second paragraph rejection above, Uzawa appears to teaches that the sound inlet is interrupted only by support portions.

Regarding claim 28, Uzawa teaches that the peripheral edge of the diaphragm (1) is “fixed” to casing member (4) which has been interpreted as the diaphragm fixing portion.

Regarding claim 30, Uzawa teaches that the diaphragm fixing portion has an orifice (the orifice is defined by the top of sound inlet-8;) which leads from the rear side of the microphone which faces away from the sound source to the second diaphragm surface and which is substantially closed by a sealing element(9).

Regarding Claim 31, Uzawa teaches that the sealing element is a porous material, as is well understood in the art.

Regarding Claim 34, Uzawa teaches a substantially annular sealing element.

Regarding Claim 35, Uzawa teaches that the sealing element is disposed within a groove (see surrounding passage) in the fixing portion.

Regarding Claim 37, Uzawa teaches that the sealing element(9) is in one piece.

Art Unit: 2643

Regarding Claim 38, Uzawa teaches that the sound inlet(8) is disposed between the diaphragm fixing portion and a holding portion. Given the broadly claimed "holding portion", the Examiner as interpreted the bobbin and voice coil member as the "holding portion" of the claim.

***Claim Rejections - 35 U.S.C. § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uzawa (US 5,148,492).

Regarding Claim 32, Uzawa does not specifically teach that the sealing element is sintered. However, absent support in the applicant's specification that the specific use of a sintered material for the sealing element provides an improved seal, it would have been obvious for one of ordinary skill in the art at the time of the invention use any variety of porous materials which would allow the passage of sound to the rear surface of the diaphragm.



Art Unit: 2643

5. Claims 33,36 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uzawa (US 5,148,492) in view of Chang (US 5,781,644).

Regarding Claims 33 and 36, Uzawa teaches a slot-shaped inlet having a sealing member. It is understood that depending upon where the damping material is positioned within the adjacent passage, i.e., closer or farther away from the inlet, the thickness of the sealing element would effectively determine the length of the sound inlet, as claimed. Uzawa does not teach that the cross section of the slot-shaped inlet is formed by a recess in the diaphragm fixing portion. Chang teaches a diaphragm fixing portion(80) having a slot-shaped inlet(72) which is substantially formed by a recess in the diaphragm fixing portion. It would have been obvious for one of ordinary skill in the art at the time of the invention to construct air passages for the flow of air to the rear surface of the diaphragm by forming a recess, like that of Chang, OR a protrusion, like that of Uzawa, as both successfully function to pass sound and air pressure to the diaphragm.

Regarding Claim 39, Uzawa does not specifically teach that the holding portion is a diaphragm ring. Shown, but not labeled in figure 4, Chang teaches a diaphragm ring connected to the diaphragm. It would have been obvious for one of ordinary skill in the art at the time of the invention to use a diaphragm ring, for the purpose of resiliently suspending the diaphragm in the microphone housing.

Regarding Claim 40, Chang teaches that the sound inlet may be formed by part of a recess in the diaphragm ring.

Art Unit: 2643

Regarding Claim 41, Chang teaches that the sound inlet(72) is formed between the diaphragm fixing portion(80) and the casing portion(10)

**Conclusion**

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statements for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Harvey whose telephone number is (703) 305-1111. The examiner can normally be reached on Monday through Friday from 8:30am to 6:00pm.

Any responses to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC 20231

or faxed to:

(703) 308-6306, for formal communications for entry

Or:

(703) 308-6296, for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor(Receptionist)

Art Unit: 2643

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached at (703) 305-4708.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Harvey whose telephone number is (703) 305-1111.

D.H.

April 3, 2003

~~CURTIS KUNTZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600~~

  
CURTIS KUNTZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600